

## **ABSTRACT OF THE DISCLOSURE**

# ERYTHROCYTIC CELLS AND METHOD FOR PRESERVING CELLS

A dehydrated composition is provided that includes freeze-dried erythrocytic cells. 5 Alcohol (e.g., sterol or cholesterol) is at least partially removed from erythrocytic cells including erythrocytic membranes. After removal of at least part of the alcohol, the erythrocytic cells have a low phase transition temperature range, an intermediate phase transition temperature range, and a high phase transition temperature range. The erythrocytic cells may be loaded with an oligosaccharide (e.g., trehalose) which preserves biological properties during freeze-drying and 10 rehydration. A process for increasing cooperativity of a phase transition of an erythrocytic cell. A process for preserving and/or increasing the survival of dehydrated erythrocytic cells, including storing dehydrated erythrocytic cells having a residual water content equal to or less than about 0.30 gram of water per gram of dry weight erythrocytic cells.